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The United States of America



The Director of the United States Patent and Trademark Office

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extensions.

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11002 U.S. PTO

10/071628



02/08/02

NOTICE

If the application for this patent was filed on or after December 12, 1980, maintenance fees are due three years and six months, seven years and six months, and eleven years and six months after the date of this grant, or within a grace period of six months thereafter upon payment of a surcharge as provided by law. The amount, number and timing of the maintenance fees required may be changed by law or regulation. Unless payment of the applicable maintenance fee is received in the Patent and Trademark Office on or before the date the fee is due or within a grace period of six months thereafter, the patent will expire as of the end of such grace period.

United States Patent [19]

Abe et al.

[11] Patent Number: 6,099,402

[45] Date of Patent: Aug. 8, 2000

[54] SMALL APPARATUS FOR DISPENSING CIRCULAR PLATE OBJECTS

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[21] Appl. No.: 09/151,531

[22] Filed: Sep. 11, 1998

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[51] Int. Cl.⁷ G07D 1/00

[52] U.S. Cl. 453/57; 221/241

[58] Field of Search 453/13, 33, 49, 453/57; 221/241; 222/305

[56] References Cited

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[57] ABSTRACT

An apparatus for dispensing disc bodies such as coins or tokens is set forth which includes a fixed substrate and a dispensing disc spaced from said substrate a distance related to the thickness of said disc bodies. The dispensing disc includes a plurality of openings having a diameter adapted to receive a disc body for dispensing thereof. The dispensing disc is attached to a shaft which is axially moveable to adjust the space between the dispensing disc and substrate. The shaft is connected to a motor through an axially aligned planetary gear apparatus. Rotation of the dispensing disc receives coins or tokens in the openings and space whereupon the coins are moved for dispensing. An elevation body engages the dispensing disc and includes a plurality of annular teeth. An adjustment body has teeth to engage the elevation body teeth. Rotation of the adjustment body axially adjusts the elevation body and dispensing disc to adjust the space to accept different thicknesses of coins.

7 Claims, 6 Drawing Sheets

